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## A study on perinatal outcome in term oligohydramnios

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### Abstract

**Background:** Adequate amount of amniotic fluid is essential for the normal growth of the fetus for, it cushions against all sorts of trauma and agitations. Its bacteriostatic properties prevents infection and it functions as a primary source of fetal nutrients.

In normal pregnancies, the volume of amniotic fluid increases to about one liter at 36 weeks maximum level. Amniotic fluid volume rises progressively during gestation until 36 weeks, the mean amniotic fluid volume relatively consistent in the level of 700-800ml. After 40 weeks there is a progressive decline of amniotic fluid volume at a rate of 8 % per week, with amniotic fluid volume averaging about 400ml at 42 wks. The clinical picture of reduced amniotic volume is termed oligohydramnios.

Using amniotic fluid index of less than 5cm the incidence of oligohydramnios was found to be 2.3% after 34 weeks. Oligohydramnios was associated with increased risk of adverse perinatal outcome. The umbilical cord compression during labor is common with oligohydramnios which increases the risk for caesarean delivery for fetal distress and 5 minute Apgar score less than 7 (Chauhan, 1999)

The decrease of amniotic fluid volume is associated with the increased labor induction, still birth, non-reassuring fetal heart pattern, meconium aspiration syndrome and neonatal death. (Casey & Coworkers 2000) [14]

This present study is undertaken to assess the perinatal outcome in Amniotic fluid index of 5 cm or less (oligohydramnios) in term pregnancies.

**Aim of the study:** To determine the perinatal outcome in term pregnancies with Amniotic fluid index  $\leq 5$  cm

**Materials and methods:** A prospective study on the perinatal outcome in term pregnancies with Amniotic fluid index  $\leq 5$  cm & control group amniotic fluid index  $>5$ cms was carried out in Department of Obstetrics & Gynecology, Government Kilpauk Medical College Hospital, during the period of February 2018 to January 2019.

### Conclusion

- Oligohydramnios is associated with adverse perinatal outcome.
- Oligohydramnios with reactive NST is associated with good prognosis (good Apgar, decreased NICU admission & neonatal death).
- Oligohydramnios with non-reactive NST needs careful monitoring and eventuates in early delivery. It increases the incidence of caesarean delivery for fetal distress, NICU admission, and low Apgar at 5 mins and Neonatal death.
- Oligohydramnios associated with IUGR carries a poor perinatal outcome (increased neonatal death, NICU admission, increased rate of CS for fetal distress, very low birth weight) Hence they need good neonatal care.

**Keywords:** Oligohydramnios, perinatal outcome

### Introduction

Liquor amnii, a fluid elaborated by amnion a two layered extra embryonic membrane formed by inner ectoderm and outer somatic mesoderm provides fluid medium for the early development of the embryo protecting it from concussion, pressure, desiccation, reminiscent of the aquatic origin of life.

Adequate amount of amniotic fluid is essential for the normal growth of the fetus for, it cushions against all sorts of trauma and agitations. Its bacteriostatic properties prevents infection and it functions as a primary source of fetal Nutrients.

In Normal Pregnancies, the volume of amniotic fluid increases to about one liter at 36 weeks maximum level. Amniotic fluid volume rises progressively during gestation until 36 weeks, the mean amniotic fluid volume relatively consistent in the level of 700-800ml. After 40 weeks there is a progressive decline of amniotic fluid volume at a rate of 8 % per week, with amniotic fluid

volume averaging about 400ml at 42 wks. The clinical picture of reduced amniotic volume is termed oligohydramnios.

Using amniotic fluid index of less than 5cm the incidence of oligohydramnios was found to be 2.3% after 34 weeks. Oligohydramnios was associated with increased risk of adverse perinatal outcome. The umbilical cord compression during labor is common with oligohydramnios which increases the risk for caesarean delivery for fetal distress and 5 minute Apgar score less than 7 (Chauhan,1999)

The decrease of amniotic fluid volume is associated with the increased labor induction, still birth, non-reassuring fetal heart pattern, meconium aspiration syndrome and neonatal death. (Casey & Coworkers, 2000) [14]

This present study is undertaken to assess the perinatal outcome in Amniotic fluid index of 5 cm or less (oligohydramnios) in term pregnancies.

**Aim of the study**

To determine the perinatal outcome in term pregnancies with Amniotic fluid index ≤5 cm.

**Materials and methods**

A prospective study on the perinatal outcome in term pregnancies with Amniotic fluid index ≤ 5 cm & control group amniotic fluid index >5cms was carried out in Department of Obstetrics & Gynecology, Government Kilpauk Medical College Hospital, during the period of February 2018 to January 2019.

**Inclusion criteria**

Pregnant women with gestational age more than 37 weeks and Amniotic fluid index 5 cm or less.

**Exclusion criteria**

1. Patients with amniotic membrane rupture or draining P/V.
2. Patients with fetus having congenital anomalies like renal agencies, polycystic kidneys.
3. Patients with multiple gestation.
4. Patients less than 37 weeks.

**Sample size**

About 100 cases in AFI ≤ 5cms (Study Group)

And 100 Cases in Control Group (AFI > 5cms)

History regarding age, parity, duration of gestation menstrual history, obstetric history and history of any complications in present pregnancy were noted.

**Observation**

The present study is under taken to study the outcome of term pregnancy with amniotic fluid index 5 cm or less (study group) and control group >5 cm

Total numbers of patient

**Table 1:** Age distributions of patients

AGE	AFI <5cm		Control group	
	No	%	No	%
< 20yrs	10	10	6	6
20 - 30yrs	81	81	89	89
> 30yrs	9	9	5	5
Total	100	100	100	100

X2 = 2.519 P=0.2837

It can be found from the above table that Majority of cases are in the age group of 20 to 30 Yrs.

**Table 2:** Mode of delivery

Mode	AFI < 5cm		Control group	
	No	%	No	%
Vaginal	35	35	65	65
Primary	50	50	25	25
LSCS	65	65	35	35
RPT	15	15	10	10
Total	100	100	100	100

X2 = 18 P = 0.00002209

In AFI ≤ 5cm, 35% had vaginal delivery and 65% had LSCS. 15% were repeat CS. In control group, 65% had vaginal delivery and 35% had LSCS. 10% were repeat CS.

**Table 3:** Color of liquor

Liquor colour	AFI ≤5cm		Control group		Total
	No	%	No	%	
Clear	54	54	75	75	129
Thin	20	20	18	18	38
Thick	26	26	7	7	33

X2 = 14.46 P = 0.0007233

26% of patients, in AFI ≤ 5 had thick meconium and only 7% of patients in control group had thick meconium. The difference was found to be significant. (P = 0.0007233).

**Table 4:** Birth weight

Birth weight	AFI < 5cm		Control group	
	No	%	No	%
>3kg	18	18	23	23
2.5-3kg	48	48	55	55
2-2.5	16	16	17	17
<2	18	18	5	5

X2 = 8.464 P = 0.03734

About 18% of babies in AFI≤5cm are below 2kg only 5% of babies in control group are below 2kg. The difference was found to be significant.

**Table 5:** Apgar score

Apgar @	AFI 5cm or Less		Control Group	
	No	%	No	%
5 Minutes				
< 4	3	3	0	0
<7	11	11	2	2
>7	86	86	98	98

X2 = 10.01 P = 0.006693

In study group 11% had apgar less than 7@ 5 minutes and in control group 2% had apgar less than 7@5 minutes. The difference was found to be significant.(P=0.006693)

**Table 6:** Neonatal outcome

NST	AFI <5cm		Control group	
	No	%	No	%
REACTIVE	67	67	84	84
Neonatal				
Death	2	2	-	-
NON-REACTIVE	33	33	16	16
Neonatal death	14	14	0	
Total Neonatal death	6	6	0	0

In AFI≤5cm about 67% of patients had reactive NST and 33% had non-reactive NST.

In control group, about 84% of patients had reactive NST and 16% had non-reactive NST. The difference was found to be significant. (P=0.002)

### Conclusion

- Oligohydramnios is associated with adverse perinatal outcome.
- Oligohydramnios with reactive NST is associated with good prognosis (good apgar, decreased NICU admission & neonatal death).
- Oligohydramnios with non-reactive NST needs careful monitoring and eventuates in early delivery. It increases the incidence of caesarean delivery for fetal distress, NICU admission, low apgar at 5 mins and Neonatal death.
- Oligohydramnios associated with IUGR carries a poor perinatal outcome (increased neonatal death, NICU admission, increased rate of CS for fetal distress, very low birth weight) Hence they need good neonatal care.

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